Zacks Small-Cap Research

February 17, 2016
Nisha Hirani, MD
312-265-9442 / nhirani@zacks.com
David Bautz, PhD
312-265-9471 / dbautz@zacks.com

scr.zacks.com
10 S. Riverside Plaza, Suite 1600, Chicago, IL 60606

Lipocine Inc. (LPCN - NASDAQ)

LPCN: Encouraging Top-Line Results from PK Dose Finding Study of LPCN 1107; Raising Price Target…

Current Recommendation	**Buy**
Prior Recommendation	N/A
Date of Last Change	09/24/2014
Current Price (02/17/16)	$9.31
Target Price	**$24.00**

UPDATE

On February 6, 2016, Lipocine, Inc. (NASDAQ:LPCN) announced top-line results from its multi-dose pharmacokinetic dose finding clinical study of LPCN 1107, its oral hydroxyprogesterone caproate (HPC) product candidate for the prevention of preterm birth. We believe Lipocine will request an End-of-Phase 2 meeting with the FDA in regards to the LPCN 1107 Phase 3 development plan at some point during the second quarter of 2016.

We spoke to management, and things appear to be progressing well with the company moving forward with all three programs. As a reminder, the PDUFA action date for LPCN 1021, a testosterone replacement therapy (TRT) designed for twice-daily oral dosing in adult hypogonadal males with low testosterone, is set for June 28, 2016. Additionally, in January 2016, Lipocine announced that the first patient was dosed in its Phase 2b clinical study for LPCN 1111, the next-generation, once-daily oral TRT product candidate.

We continue to believe that the stock represents an attractive long-term investment opportunity. After re-visiting our model, we are raising our price target to $24, and continue to rate the stock a 'Buy'. We believe the recent pullback in the biotech sector presents investors with an interesting long-term buying opportunity.

SUMMARY DATA

52-Week High	**$18.54**
52-Week Low	**$5.51**
One-Year Return (%)	**48.22**
Beta	**1.87**
Average Daily Volume (sh)	**110,694**
Shares Outstanding (mil)	**18**
Market Capitalization ($mil)	**$160**
Short Interest Ratio (days)	**8.90**
Institutional Ownership (%)	**48**
Insider Ownership (%)	**15**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2015 Estimate	**N/A**
P/E using 2016 Estimate	**N/A**

Risk Level	**Above Average**
Type of Stock	**Small-Growth**
Industry	**Med-Biomed/Gene**

ZACKS ESTIMATES

Revenue

(In millions of $)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2014	$0.0 A	$0.0 A	$0.0 A	$0.0 A	$0.0 A
2015	$0.0 A	$0.0 A	$0.0 A	$0.0 E	$0.0 E
2016					$0.0 E
2017					$74.8 E

Earnings per Share

(EPS is operating earnings before non-recurring items)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2014	-$0.41 A	-$0.55 A	-$0.32 A	-$0.32 A	-$1.60 A
2015	-$0.23 A	-$0.26 A	-$0.35 A	-$0.44 E	-$1.32 E
2016					-$1.28 E
2017					$0.23 E

© Copyright 2016, Zacks Investment Research. All Rights Reserved.

WHAT'S NEW

Update on LPCN 1107

On February 16, 2016, Lipocine Inc. (NASDAQ:LPCN) reported top-line results of its multi-dose pharmacokinetic dose finding clinical study of LPCN 1107, its oral hydroxyprogesterone caproate (HPC) candidate for the prevention of preterm birth in pregnant women. As a reminder, LPCN 1107 was granted orphan drug designation by the U.S. Food and Drug Administration (FDA) in June 2015, and has also been evaluated in two Phase 1 proof-of-concept studies in both pregnant and non-pregnant women.

On September 28, 2015, Lipocine announced initiation of its Phase 2 multi-dose PK dose finding clinical study with the first subject dosed with LPCN 1107. The primary objective of the study was to study pharmacokinetics over an extended period of time in pregnant women at multiple dose strengths of oral administration of LPCN 1107. The clinical study was an open-label, four-period, four-treatment, randomized, single and multiple dose, PK study in pregnant women of three dose levels of LPCN 1107 and injectable HPC (Makena®). The study enrolled 12 healthy pregnant women (average age of 27 years) with a gestational age of approximately 16 to 19 weeks. Subjects received three dose levels of LPCN 1107 (400 mg twice-daily, 600 mg twice-daily, or 800 mg twice-daily) in a randomized, crossover manner during the first three treatment periods and then received five weekly injections of HPC during the fourth treatment period. During each of the LPCN 1107 treatment periods, subjects received a single dose of LPCN 1107 on Day 1 followed by twice daily administration from Day 2 to Day 8. Following completion of the three LPCN 1107 treatment periods and a washout period, all subjects received five weekly injections of HPC.

The company reported that average steady state HPC levels (C_{avg}0-24) were comparable or higher for all three LPCN 1107 doses than for injectable HPC. HPC levels as a function of daily dose were linear for the three LPCN 1107 doses. Unlike the injectable HPC, steady state exposure was achieved for all three LPCN 1107 doses within seven days. Currently, the approved HPC injectable product is a single fixed dose product that does not allow for dose adjustments. Lipocine also referenced a previous literature study of 250 mg injectable HPC in pregnant women that reported that the lowest preterm birth rates were seen when median HPC concentrations exceeded 6.4 ng/mL and that the plasma concentrations of HPC ranged between 3.7 to 56 ng/mL with the injectable HPC (Caritis *et al*., 2013). With all three LPCN 1107 doses tested, HPC exposure (C_{avg}0-24) did not drop below 6.4 ng/ml in any of the study subjects.

We were expecting to see top-line results during the first quarter of 2016, so we are glad to see that things are progressing forward in a timely fashion. As per Lipocine, LPCN 1107 was well-tolerated at all three dose levels, with no adverse drug reactions, serious adverse events, or deaths reported during the study. Based on the released data, it sounds like relevant HPC levels were achieved following oral administration of the doses, and we think that the data reported is encouraging and could potentially allow for dose adjustments of LPCN 1107 during the course of therapy in order to obtain more favorable clinical outcomes. Overall, we view the top-line results as good news for Lipocine, and believe that the company will request an End-of-Phase 2 meeting with the FDA in regards to the Phase 3 development plan at some point during the second quarter of 2016. As a reminder, Lipocine announced its development plans for LPCN 1107 on June 8, 2015. Lipocine received a Type C written response from the FDA that outlined next steps in the development of LPCN 1107. Based on this FDA feedback, Lipocine has been working on formulation optimization of the candidate, and with the top-line results of the multiple-dose PK dose selection study in pregnant women now reported, we believe that LPCN 1107 should be Phase 3 ready by mid-late 2016.

We believe that an oral formulation of HPC would offer a number of advantages over the current injectable formulation of the drug, including elimination of pain and reaction at the injection site as well as eliminating weekly trips to the doctor's office for administration of the compound. We continue to believe that the area of preterm birth, even in countries as developed as the United States, is an area of unmet need. At this point, we see a path forward for LPCN 1107, and look forward to watching the LPCN 1107 story unfold.

LPCN 1107 Receives Orphan Drug Designation

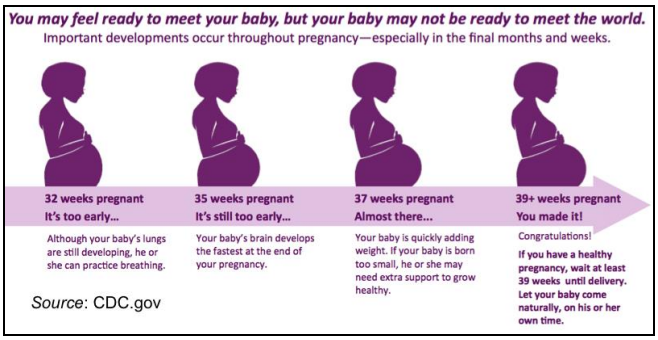
On June 2, 2015, Lipocine announced that the FDA granted orphan drug designation to LPCN 1107. We will proceed to provide a review on preterm birth and highlight how newly designated orphan drug LPCN 1107, in our opinion, further improves the fundamental outlook for the company. In order to obtain orphan drug exclusivity upon approval, we would like to mention that LPCN 1107 will need to demonstrate clinical superiority to the same drug

already approved for the same orphan indication. This can be achieved, for instance, by demonstrating clinical superiority through establishing that the product offers a "major contribution to patient care."

Background on Preterm Birth

In humans, an ordinary pregnancy lasts 37 to 42 weeks, with the average being 40 weeks. A majority of babies born in the U.S. arrive near their due date, plus or minus a week or two. However, in approximately 12% of pregnancies, babies are born prior to 37 weeks gestation, which is the definition of preterm birth. This represents approximately 500,000 babies, or one in every eight babies born in the U.S. According to Shali Mazaki-Tovi *et al.*, 2007, a woman delivering prior to 37 weeks is roughly four-times more likely to deliver a subsequent child preterm.

Preterm birth is associated with a wide range of problems, including breathing issues, feeding difficulties, cerebral palsy, developmental delay, vision problems, and hearing impairment. In addition, preterm birth remains the leading cause of infant mortality, accounting for as many as 75% of perinatal deaths (Ananth *et al*., 2006). As the following image from the CDC shows, although a baby's lungs are developed by 32 weeks into the pregnancy, a number of other development steps continue up through 39 weeks.



Along with the adverse health implications, preterm birth also has a substantial economic burden. According to the Institute of Medicine, in 2005, the costs associated with preterm birth totaled $26.2 billion, which is made up of the following:

- ✓ Medical services of $16.9 billion, with over 85% of those medical care services delivered in early infancy.
- ✓ Maternal delivery costs of $1.9 billion.
- ✓ Early intervention services of $611 million.
- ✓ Special education services associated with the higher prevalence of the four major disabling conditions among preterm infants (cerebral palsy, mental retardation, vision impairment, and hearing loss) of $1.1 billion.
- ✓ Lost household and labor market productivity associated with preterm births of $5.7 billion.

While taking into account special education services and lost productivity cost for the four major disabling conditions associated with preterm birth, we view this $26.2 billion figure to be a staggering number. However, it does not include the cost of medical care beyond early childhood or caretaker costs. For example, the first-year medical costs for PTB infants are 10 times higher than for full term infants. As such, we view the opportunity for a safe and effective therapeutic for the prevention of PTB as a billion-dollar market opportunity.

While the exact causes of preterm birth are still unclear, there are a number of known risk factors, which include:

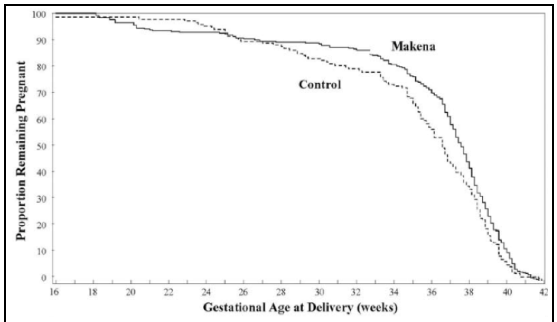
- → Having a previous preterm birth
- → Carrying more than one baby
- → Chronic health problems in the mother (diabetes, high blood pressure, and clotting disorders)
- → Cigarette smoking, alcohol abuse, or illicit drug use during pregnancy

Hydroxyprogesterone Caproate for the Prevention of Preterm Birth

Currently, hydroxyprogesterone caproate (HPC) is the only FDA approved treatment for the prevention of preterm birth. Several other compounds are used off-label, though the evidence of their efficacy from randomized controlled trials is lacking. HPC is a synthetic steroid hormone that is an ester derivative of 17α-hydroxyprogesterone formed from caproic acid. The drug was previously marketed by Bristol Myers Squibb under the trade name Delalutin® after being approved by the FDA in 1956.

In February 2011, the U.S. FDA granted approval to KV Pharmaceutical for Makena®, an intramuscular (IM) injection of HPC, for the prevention of preterm birth in women with a history of preterm delivery and a singlet pregnancy. The approval was based on a multi-center, randomized, vehicle-controlled, double-blind Phase 3 clinical trial conducted in 2003 (Meis *et al*., 2003). A total of 463 women enrolled in the study to receive either HPC (n=310) or placebo (n=153) at a dose of 250 mg administered weekly by intramuscular injection beginning at 16-20 weeks of gestation and continuing until 36 weeks of gestation or delivery.

In the study, 36.3% of births occurred before 37 weeks gestation in the HPC group, compared to 54.9% in the placebo group (p<0.001). Delivery before 35 weeks of gestation was also less frequent in the HPC group (20.6% vs. 30.7%, p=0.02) with an approximately 40% reduction in the rate of delivery before 32 weeks of gestation in the HPC group (11.4% vs. 19.6%, p=0.02). The following graph shows the percentage of women remaining pregnant as a function of gestational age.



Source: FDA Summary Review for Makena®

Prior to approximately 25 weeks gestation, a numerically greater proportion of subjects randomized to the HPC group delivered prematurely; after 28 weeks a greater proportion of subjects randomized to the control group delivered prematurely. The increased proportion of preterm births in the HPC-treated subjects prior to 25 weeks gestation was due, in part, to five miscarriages. Whether treatment with HPC contributed to the early pregnancy losses is not known at this time; however, this finding was not observed in the HPC-treated group from a smaller supportive study.

Prior to its approval by the FDA, hydroxyprogesterone caproate had been available through off-label use and prepared at pharmacies that compounded the agent into an injectable form at a cost of approximately $15 per injection. With 15 to 20 injections required for a full treatment course that put the cost of the drug at approximately $250-300 for a full-term pregnancy. However, Makena® was approved as an orphan drug, and upon approval KV Pharmaceuticals began charging $1,500 per injection, or approximately $25,000 for a full-term pregnancy. This pricing was heavily criticized, and in April 2011 the company announced they were lowering the price to $690 per injection. Still, the cost of a full-term pregnancy ranges between $11,000 and $14,000.

More on LPCN 1107: An Oral Formulation of HPC

Lipocine is developing LPCN 1107 as the first oral HPC for the prevention of preterm birth by formulating HPC with the Lip'ral™ technology. LPCN 1107 was evaluated in a Phase 1 study in ten healthy, non-pregnant female volunteers where the study subjects received either one single dose of 400 mg of LPCN 1107 or two doses of LPCN 1107 administered 12 hours apart, followed by a single dose of 250 mg intramuscular HPC, with a one week washout period between each treatment. Results from the trial showed that there was significant absorption upon oral dosing of LPCN 1107 with a good dose response demonstrated as both C_{max} and AUC increased significantly from the single dose to the twice-daily dose. The following chart shows that LPCN 1107 steady state 400 mg twice daily exposure was approximately 55% of weekly 250 mg intramuscular HPC. The Phase 1a data of healthy, non-pregnant women has been presented at the Society for Maternal-Fetal Medicine 35th Annual Meeting.

Steady state pharmacokinetic parameters - Geometric mean [min - max]		
Products / Dosing Regimen	**$C_{ss,max}$ (ng/mL) [range]**	**$AUC_{SS-1\ week}$(ng.h/mL) [range]**
LPCN 1107 400mg BID	23.9 [9.6 – 70.0]	1348 [673 - 3381]
Intramuscular injection, 250mg	17.8 [14.0 – 27.0]	2468 [1840 - 3180]

Source: Lipocine, Inc.

Positive Top-line Results in Phase 1b Study of LPCN 1107 In Pregnant Women

On January 12, 2015, Lipocine announced positive top-line results in a Phase 1b proof of concept study of LPCN 1107 for the prevention of preterm birth in pregnant women. The study was designed to determine the safety, tolerability, bioavailability and pharmacokinetics of LPCN 1107 as compared to an intramuscular HPC. The study was an open-label, three period, three treatment serial dosing study. Eight healthy pregnant women at 16 to 18 weeks gestation received three treatments in sequence. In period 1, patients received two doses of 400 mg oral LPCN 1107, administered 12 hours apart. In period 2, subjects received two doses of 800 mg oral LPCN 1107, administered 12 hours apart. Finally, in period 3, patients received a single dose of 250 mg HPC via intramuscular injection (the marketed product Makena®). Periodic blood sampling was collected over 24 hours following oral administration of the drug and over 28 days after the HPC IM dose.

Results from this study showed the first demonstration of HPC absorption following oral administration in healthy pregnant women. C_{MAX} and AUC for the oral administrations with LPCN 1107 are shown below (*below left*). LPCN 1107 dosing once adjusted to fall between 400 and 800 mg twice a day is expected to be comparable to the marketed 250 mg weekly IM product (*below right*).

Single Dose Pharmacokinetic Parameters

Dosing Regimen (BID) (N=7*)	C_{max} (ng/ml) [range]	AUC $_{0-24}$ (ng.h/ml) [range]
400mg	21.3 [11.5 - 36.2]	156 [81 - 234]
800 mg	63.2 [37.8 - 144]	577 [323 - 1365]

* one subject data analysis pending

Source: Lipocine, Inc.

Simulated Steady State Pharmacokinetic Parameters

Products / Dosing Regimen (N=7*)	$C_{ss,max}$ (ng/ml) [range]	AUC $_{SS}$ (ng.h/ml)# [range]
LPCN 1107 / 400mg BID	21.6 [12.1 - 36.2]	1074 [573-1601]
LPCN 1107 / 800mg BID	71.1 [43.8 - 144.1]	4058 [2180-7701]
Intramuscular injection / 250mg weekly	13.0 [6.5 - 29.4]	1817 [805 - 3904]

* one subject data analysis pending

The relative bioavailability of oral to intramuscular administration was similar between pregnant and non-pregnant women (from the Phase 1a study in healthy, non-pregnant women) and can be seen below. In this Phase 1b study, LPCN1107 was well-tolerated with no serious adverse events observed. Management believed that increasing the dose to the 550-600 mg range BID (from 400 mg BID) would allow for the proper efficacy, and was further explored in the Phase 2b dose finding study that we discussed at the beginning of this report.

Study population (N)	AUC $_{SS}$ (ng.h/ml)#		Relative bioavailability [oral / IM]
	LPCN 1107/ 400 mg BID Oral	Intramuscular Injection / 250 mg weekly	
Pregnant women (7*)	1074	1817	59 %
Non-pregnant women (10)	1348	2468	55 %

LPCN 1107 Phase 1 Study Results: Bioavailability in Pregnant and Non-Pregnant Women

Source: Lipocine, Inc.

* one subject data analysis pending
# AUCss calculated for post steady state 1 week duration

LPCN 1107 Competitive Landscape

It is important to examine where LPCN 1107 may fit into the competitive landscape in comparison to the other treatment option currently available for prevention of preterm birth (PTB).

- AMAG Pharmaceuticals, Inc. acquired Lumara Health in November 2014 for $675 million in upfront payments with the potential of up to $350 million in contingent payments as certain sales milestones are achieved. Lumara Health is the exclusive marketer of Makena® (hydroxyprogesterone caproate injection), the only FDA approved product indicated to decrease the rate of PTB in women who are pregnant with one baby and who have delivered one preterm baby spontaneously in the past. Makena® is a weekly intramuscular injection (via 21 gauge needle) administered every seven days beginning between 16 and 20 weeks of gestation to alternating gluteus muscles. It significantly lowered the rate of preterm birth compared to women not on

Makena®. According to Lipocine, the 2014 net sales of Makena® were roughly $165 million, with 2015 net sales projected to be anywhere between $245 and $270 million. Makena® has orphan drug exclusivity until 2018.

LPCN 1107: A Future Game Changer in the PTB Space

Approximately 12% of all pregnancies in the U.S. end in preterm birth (*right)*, with approximately 40% of those having a history of spontaneous preterm birth. This equates to approximately 180,000 pregnancies annually that would be eligible for treatment with HPC. As noted above, prior to the approval of Makena®, HPC was available through compounding pharmacies and cost approximately $250-300 for a full course of treatment. KV Pharmaceuticals originally priced Makena® at $1,500 per injection, but due to a backlash they lowered the price to $690 per injection. At this price level, the cost would be between $11,000 and $14,000 for the 16-20 week treatment course. We believe the backlash over Makena® pricing was due to the undifferentiated aspect of the drug compared to what could be acquired for 1/100th of the cost prior to the approval of Makena®, and was not a function of the effectiveness of the drug.

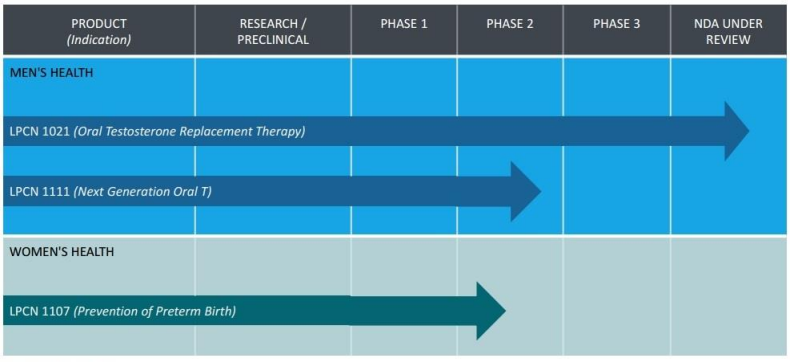
	Rank for number of preterm births	Number of preterm births (% of global total)	Preterm birth rate (% of livebirths)	Number of livebirths (% of global total)
India	1	3 519 118 (23·6%)	13·0%	27 200 000 (20·1%)
China	2	1 172 259 (7·8%)	7·1%	16 600 000 (12·3%)
Nigeria	3	773 597 (5·2%)	12·2%	6 332 251 (4·7%)
Pakistan	4	748 142 (5·0%)	15·8%	4 741 460 (3·5%)
Indonesia	5	675 744 (4·5%)	15·5%	4 371 818 (3·2%)
USA	6	517 443 (3·5%)	12·0%	4 300 620 (3·2%)
Bangladesh	7	424 144 (2·8%)	14·0%	3 037 652 (2·3%)
Philippines	8	348 871 (2·3%)	14·9%	2 344 154 (1·7%)
Democratic Republic of Congo	9	341 421 (2·3%)	11·9%	2 872 606 (2·1%)
Brazil	10	279 256 (1·9%)	9·2%	3 022 823 (2·2%)
Total	..	8·8 million (59%)	..	74·8 million (55%)

Table 4: The ten countries with the highest numbers of preterm births in 2010

1: Blencowe H, Cousens S, Oestergaard M, Chou D, Moller AB, Narwal R, Adler A, Garcia CV, Rohde S, Say L, Lawn JE. National, regional and worldwide estimates of preterm birth. The Lancet, June 2012. 9;379(9832):2162-72. Estimates from 2010.

Lipocine believes LPCN 1107 surpasses Makena® in several areas. First of all, LPCN 1107 is an oral formulation with the same API as Makena®, but does not require invasive, weekly injections, and therefore there is no potential for injection site reactions, excessive pain or infections from the weekly injections. This could eliminate anywhere from 18 to 22 injections. Furthermore, this would virtually eliminate the need for weekly doctor/nurse visits with an oral formulation as compared to an IM dose as well as the risk for pulmonary embolism. The most common side effects reported (vs. the control group) were injection site reactions and included pain (35%), swelling (17%) and other side effects such as urticaria (12%). Of those on Makena®, 35% of patients suffer from injection site pain, 17% from swelling and other possible serious side effects. As such, we believe that LPCN 1107 has the potential to become the first oral HPC product for the prevention of preterm birth in women with a prior history of at least one preterm birth. We have modeled the drug costing $5,000 per treatment course and with a 25% market share see the drug attaining approximately $250 million in peak revenues. We note that Lipocine has the potential to price the drug significantly higher than we currently model, potentially double our forecast.

Quick Pipeline Update for LPCN 1021 & LPCN 1111



Source: Lipocine Inc.

- **LPCN 1021**

On August 28, 2015, Lipocine Inc. submitted a 505(b)(2) New Drug Application (NDA) to the U.S. Food and Drug Administration (FDA) for Lipocine's lead asset LPCN 1021. LPCN 1021 is a testosterone replacement therapy (TRT) designed for oral twice daily dosing in adult hypogonadal males with low testosterone. The FDA accepted the NDA on October 29, 2015, and subsequently on November 12, 2015, Lipocine announced that the FDA assigned a

Prescription Drug User Fee Act (PDUFA) goal date of June 28, 2016 for completion of the review of the NDA, as we had expected according to the standard 10-month review period.

What we find most interesting is that the FDA is not requiring an Advisory Committee prior to the PDUFA date. We view this as good news, and in our opinion, we believe this means that the FDA does not need any independent expert advise regarding the LPCN 1021 data that Lipocine has submitted. We assume that the FDA did not identify any significant issues in its initial review to warrant an AdComm. We think there is always a small chance that the FDA could come back and ask for an AdComm, however we find this unlikely to occur at this point. Not having an AdComm will save Lipocine significant time and costs associated with hiring outside consultation for this activity. We believe that instead of preparing for an AdComm, Lipocine can instead focus on moving its pipeline forward and can continue to prepare for a potential commercial launch for LPCN 1021. We view all of this as good news for Lipocine, and continue to believe that LPCN 1021 is on track to receive approval.

Our previous updates discuss LPCN 1021 data from the Phase 3 SOAR trial, the food effect study, and 52-week safety extension arm study in depth. We continue to believe the oral formulation of LPCN 1021, if approved, may improve patient compliance as it appears to be a generally safe, effective, and a more convenient TRT option as compared to topical and injectable TRT products that are currently on the market. LPCN 1021 will have to adhere to all of the new regulations set forth by the FDA if approved. For instance, cautionary language will be required on the label for possible cardiovascular and stroke related risk with TRT, and the lack of benefit and safety of TRT in age-related hypogonadism. Additionally, if LPCN 1021 is approved, we are not sure what the post-approval obligations will be regarding a heart attack and stroke risk study. Lipocine may be have to contribute to an on-going industry-led heart attack and stroke risk study, or it may need to conduct a separate long-term study.

- **LPCN 1111**

On January 4, 2016, Lipocine announced that the first patient has been dosed in its Phase 2b clinical study for LPCN 1111, a once daily oral testosterone replacement therapy (TRT) product candidate. The primary objectives of the study will be to determine the optimal dose of LPCN 1111 along with the safety and tolerability of LPCN 1111 and its metabolites following oral administration of single and multiple doses of LPCN 1111 in hypogonadal males.

As a reminder, LPCN 1111 is the next-generation oral TRT version of LPCN 1021 that has the potential for once daily dosing through use of the company's proprietary Lip'ral™ solubilization technology that improves systemic absorption to give effective testosterone levels upon daily dosing. We expect to see top-line data from the Phase 2b study at some point during the second quarter of 2016.

With positive Phase 2a data of LPCN 1111 in place, and the Phase 2b trial now initiated, we believe an End-of-Phase 2 meeting with the FDA should occur at some point during the second half of 2016. As per management, LPCN 1111 is about 24 months behind LPCN 1021. In our opinion, based on the Phase 2a data, this candidate looks like a potential game-changer for TRT, and if the Phase 3 data are positive, and all goes according to the timeline, we could see potential approval as early as 2018.

Conclusion

We continue to remain proponents of Lipocine Inc. as an investment in the specialty pharmaceutical sector, and we believe the recent pullback presents investors with an interesting buying opportunity. The company is currently developing three product candidates (LPCN 1021, LPCN 1111, and LPCN 1107) in conjunction with its patented Lip'ral™ oral drug delivery system which is designed to enhance the pharmacokinetic parameters of the drugs, facilitate lower dosing requirements, reduce side effects, and limit gastrointestinal interactions that would otherwise decrease the effectiveness of the compounds. We would like to bring attention to several near term value drivers, which are outlined below:

Event	Expected Timing
LPCN 1107: Request End of Phase 2 Meeting	2Q16
LPCN 1111: Top-line Results from Phase 2b Study	2Q16
LPCN 1021: FDA PDUFA Date	June 28, 2016
LPCN 1111: End of Phase 2 Meeting	2H16
LPCN 1021: File NDS in Canada	2H16

Source: Lipocine Inc.

Lipocine has made considerable progress with LPCN 1021. With the NDA accepted and PDUFA date assigned for June 28, 2016, we see LPCN 1021 as having significant potential, and on track for mid-2016 approval. If all goes well, we are expecting LPCN 1021 will see U.S. approval around the middle of 2016, and model peak U.S. sales in the $400 million range. Additionally, we believe that Lipocine could file a New Drug Submission (NDS) in Canada during the second half of 2016. Although we do not currently factor Canadian sales of LPCN 1021 into our model, investors should know that this could offer additional upside to the story. We also believe that LPCN 1021 is much further ahead of any of its competitors, especially with news surrounding Repros Therapeutics Inc. ® (NASDAQ: RPRX) receiving a Complete Response Letter (CRL) from the FDA for its NDA for enclomiphene citrate (formerly known as Androxal®) for the treatment of secondary hypogonadism in overweight men wishing to restore normal testicular function.

Topical products that are associated with poor patient compliance dominate the current testosterone market. We view patient compliance as one of several of serious issues with testosterone replacement products. This issue is not limited to just testosterone products as numerous studies have shown that once-daily dosing regimens had the highest rates of patient adherence (Claxton *et al*., 2001). Thus, the strategy with LPCN 1111 is to formulate a once daily oral dose of testosterone through a proprietary formulation coupled with the Lip'ral™ technology. An oral dosage testosterone would differentiate itself from gels, patches, and injections due to the convenience, discreteness, and lack of transference. We remind investors that the second-generation version of the drug, LPCN 1111, currently being evaluated in a dose-finding Phase 2b trial, could expand the potential peak U.S. sales to over $600 million. We believe that LPCN 1111 is roughly 24 months behind LPCN 1021 in development. Additionally, it is important to point out that LPCN 1111 is intended to be a once-daily dosing product, as compared to the twice-daily dosing profile of LPCN 1021.

We believe that the positive top-line results from the Phase 2b study of LPCN 1107 for the prevention of preterm birth in pregnant women, and the candidate receiving U.S. orphan drug designation are significant positives for the company. Orphan designation not only protects the intellectual property of the drug, but also allows for aggressive pricing and reduced development and regulatory costs. We model peak U.S. sales of LPCN 1107 of approximately $275 million.

As of September 30, 2015, Lipocine had cash, cash equivalents, and marketable investment securities of $47.8 million. We continue to believe the current cash balance is sufficient to fund operations past the PDUFA date for LPCN 1021, and into the third quarter 2016. We believe that the April 2015 completion of the public offering is allowing Lipocine to step up increased development efforts of LPCN 1111 and LPCN 1107, in addition to focusing on the on-going pre-commercial LPCN 1021 activities. Assuming that LPCN 1021 is approved in 2016, we believe operating expenses will continue to rise in anticipation of the company hiring an adequate sized sales force to promote the drug, in addition to expenses related to maintaining, expanding, and protecting its IP portfolio, and other activities to prepare for the commercialization launch.

We would also like to point out that Lipocine adopted a poison pill on November 16, 2015. The plan was not adopted in response to any current takeover attempt, but is intended to ensure that if there is ever a party interested in acquiring Lipocine, that it will work through the board of directors as opposed to a hostile takeover.

Our NPV analysis on the three product candidates pegs fair value at close to $500 million. We continue to believe that the stock represents an attractive long-term investment opportunity. After re-visiting our model, we have raised the probability of success of LPCN 1107 to 40% as we believe the candidate will be Phase 3 by mid-late 2016. We are raising our price target to $24, and continue to rate the stock a 'Buy'. We remain bullish on Lipocine shares as an investment in the specialty pharmaceutical sector because we think the company has a promising pipeline.

PROJECTED FINANCIALS

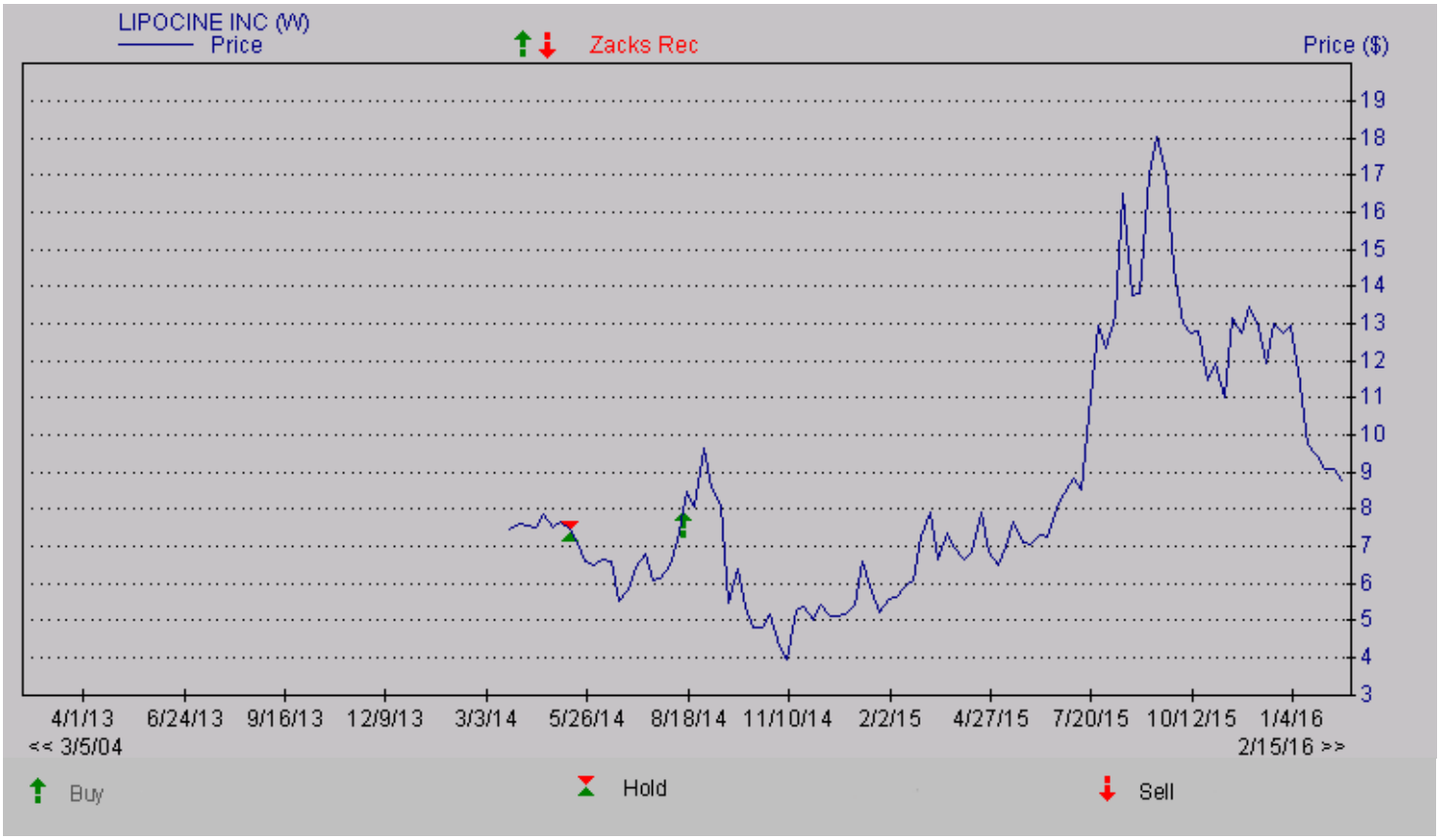
Lipocine Inc. - Income Statement

Lipocine Incorporated	2014 A	Q1 A	Q2 A	Q3 A	Q4 E	2015 E	2016 E	2017 E
LPCN 1021	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$74.8**
YOY Growth	-	-	-	-	-	-	-	-
LPCN 1111	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
YOY Growth								
LPCN 1107	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
YOY Growth								
Total Revenues	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$74.8**
CoGS	$0	$0	$0	$0	$0	$0	$0	$30
Product Gross Margin	-						-	*60.0%*
R&D	$15.5	$1.9	$3.2	$4.7	$6.0	$15.8	$18.0	$20.0
SG&A	$5.0	$1.1	$1.1	$1.7	$2.0	$5.9	$7.5	$20.0
Other expenses	$0.0	$0.0	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1
Operating Income	($20.5)	($3.0)	($4.3)	($6.4)	($8.0)	($21.8)	($25.6)	$4.8
Operating Margin	-					-	-	-
Total Other Income	$0.1	$0.0	$0.0	$0.1	$0.0	$0.0	$0.0	$0.0
Pre-Tax Income	($20.4)	($3.0)	($4.2)	($6.4)	($8.0)	($21.8)	($25.6)	$4.8
Taxes & Other	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Tax Rate	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Net Income	($20.4)	($3.0)	($4.2)	($6.4)	($8.0)	($21.8)	($25.6)	$4.8
Reported EPS	**($1.60)**	**($0.23)**	**($0.26)**	**($0.35)**	**($0.44)**	**($1.32)**	**($1.28)**	**$0.23**
YOY Growth	-						-	-
Shares Outstanding	12.8	12.8	16.5	18.2	18.3	16.5	20.0	21.0

Source: Company Filing // Zacks Investment Research, Inc. Estimates

© Copyright 2016, Zacks Investment Research. All Rights Reserved.

HISTORICAL ZACKS RECOMMENDATIONS



© Copyright 2016, Zacks Investment Research. All Rights Reserved.

DISCLOSURES

The following disclosures relate to relationships between Zacks Small-Cap Research ("Zacks SCR"), a division of Zacks Investment Research ("ZIR"), and the issuers covered by the Zacks SCR Analysts in the Small-Cap Universe.

ANALYST DISCLOSURES

We, Nisha Hirani, MD, and David Bautz, PhD, hereby certify that the views expressed in this research report accurately reflect our personal views about the subject securities and issuers. We also certify that no part of our compensation was, is, or will be, directly or indirectly, related to the recommendations or views expressed in this research report. We believe the information used for the creation of this report has been obtained from sources we considered to be reliable, but we can neither guarantee nor represent the completeness or accuracy of the information herewith. Such information and the opinions expressed are subject to change without notice.

INVESMENT BANKING, REFERRALS, AND FEES FOR SERVICE

Zacks SCR does not provide nor has received compensation for investment banking services on the securities covered in this report. Zacks SCR does not expect to receive compensation for investment banking services on the Small-Cap Universe. Zacks SCR may seek to provide referrals for a fee to investment banks. Zacks & Co., a separate legal entity from ZIR, is, among others, one of these investment banks. Referrals may include securities and issuers noted in this report. Zacks & Co. may have paid referral fees to Zacks SCR related to some of the securities and issuers noted in this report. From time to time, Zacks SCR pays investment banks, including Zacks & Co., a referral fee for research coverage.

Zacks SCR has received compensation for non-investment banking services on the Small-Cap Universe, and expects to receive additional compensation for non-investment banking services on the Small-Cap Universe, paid by issuers of securities covered by Zacks SCR Analysts. Non-investment banking services include investor relations services and software, financial database analysis, advertising services, brokerage services, advisory services, equity research, investment management, non-deal road shows, and attendance fees for conferences sponsored or co-sponsored by Zacks SCR. The fees for these services vary on a per client basis and are subject to the number of services contracted. Fees typically range between ten thousand and fifty thousand USD per annum.

POLICY DISCLOSURES

Zacks SCR Analysts are restricted from holding or trading securities placed on the ZIR, SCR, or Zacks & Co. restricted list, which may include issuers in the Small-Cap Universe. ZIR and Zacks SCR do not make a market in any security nor do they act as dealers in securities. Each Zacks SCR Analyst has full discretion on the rating and price target based on his or her own due diligence. Analysts are paid in part based on the overall profitability of Zacks SCR. Such profitability is derived from a variety of sources and includes payments received from issuers of securities covered by Zacks SCR for services described above. No part of analyst compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in any report or article.

ADDITIONAL INFORMATION

Additional information is available upon request. Zacks SCR reports are based on data obtained from sources we believe to be reliable, but are not guaranteed as to be accurate nor do we purport to be complete. Because of individual objectives, this report should not be construed as advice designed to meet the particular investment needs of any investor. Any opinions expressed by Zacks SCR Analysts are subject to change without notice. Reports are not to be construed as an offer or solicitation of an offer to buy or sell the securities herein mentioned.

ZACKS RATING & RECOMMENDATION

ZIR uses the following rating system for the 1240 companies whose securities it covers, including securities covered by Zacks SCR:
Buy/Outperform: The analyst expects that the subject company will outperform the broader U.S. equity market over the next one to two quarters.
Hold/Neutral: The analyst expects that the company will perform in line with the broader U.S. equity market over the next one to two quarters.
Sell/Underperform: The analyst expects the company will underperform the broader U.S. Equity market over the next one to two quarters.

The current distribution is as follows: Buy/Outperform- 24.0%, Hold/Neutral- 52.2%, Sell/Underperform – 18.0%. Data is as of midnight on the business day immediately prior to this publication.